Case Report

A rare case of pancreatic injury with transection of main pancreatic duct managed conservatively

Ashutosh Ghuge[1], Rajiv Sonarkar[2], Bapuji S Gedam[3], Giriraj Gajendra[4]

From [1,4]Junior Resident, [2]Assistant Professor, [3]Professor, Department of Surgery, NKP-SIMS, Nagpur, Maharashtra, India

Correspondence to: Dr. Giriraj Gajendra, R No. 21, Satpuda Hostel, NKP-SIMS, Digdoh, Hingna Road, Nagpur - 440 019, Maharashtra, India. E-mail: ashm0781@gmail.com

Received - 09 May 2018 Initial Review - 30 May 2018 Accepted - 10 Jul 2018

ABSTRACT

An isolated injury to the pancreas is uncommon and the management remains controversial. The integrity of the main pancreatic duct is considered the most important determinant for prognosis. Physical signs and laboratory parameters are often inaccurate, and missing the diagnosis can cause serious clinical problems. We report a case of a 20-year-old man with blunt abdominal trauma. Pancreatic injuries although uncommon should be considered in the differential diagnosis in case of blunt abdominal trauma. Furthermore, the clinician should be aware that when pancreatic injuries are managed conservatively, the clinical, radiological, and laboratory parameters need to be monitored until resolution.

Key words: *Magnetic resonance cholangiopancreaticography, Pancreatic transection, Pancreatic trauma, Serum amylase levels*

Pancreatic injury accounts for <5% of major abdominal injuries [1]. Among these pancreatic injuries, two-thirds of them are associated with penetrating abdominal trauma and one-third is associated with blunt abdominal trauma [2]. An early diagnosis of pancreatic trauma can be challenging and difficult because of the lack of correlation between the initial presenting features, radiological and laboratory findings, and the severity of the trauma.

Pancreatic injuries are caused by compression of the pancreas between the vertebral columns. These injuries were extremely difficult to detect in the old days but have now become easier to pick up with the advent of cross-sectional imaging, especially the computed tomography (CT) scan [3]. Morbidity and mortality increases with associated injury to other abdominal organs and vascular structures as well as with delay in diagnosis. We present a rare case of pancreatic injury in a 20-year-old male.

CASE REPORT

A 20-year-old male presented to the emergency department with an alleged history of road traffic accident with blunt injury to the abdomen 1 day back. He had pain in the epigastrium, which was gradually increasing in intensity. He also complained of repeated bilious vomiting and distension of the abdomen.

Clinical examination revealed that the patient was toxic with increased heart rate and respiratory rate. He was conscious, well-oriented with an absence of fever. The abdominal examination revealed tenderness and guarding in the epigastrium. On auscultation, the chest was clear and bowel sound was absent. All general examinations including vitals were within the normal limits.

The chest and abdominal erect plain radiographs were normal. The white blood cells count and liver function tests are within the normal limits. Serum amylase level was 589 U/L (normal limit - up to 95U/L) and serum lipase was 2354U/L (normal limit - up to 190U/L).

An urgent ultrasound scan of the abdomen showed heterogeneous pancreas with mild ascites. A diagnosis of pancreatic injury was kept based on the ultrasound findings. A CT scan (Figs. 1 and 2) of the abdomen revealed hepatic laceration shown in the subdiaphragmatic surface of segment 4 of the left lobe of the liver. Similar linear branching, low attenuation, and non-enhancing defect (3 mm thickness) with ragged margin are shown between the head and body of the pancreas which are shown passing from anterior margin to posterior margin of the pancreas with associated transection of the main pancreatic duct (MPD) at this level representing the pancreatic laceration. These imaging findings are suggestive of Grade 3 liver injury and Grade 3 pancreatic injury. The rest of the abdominal viscera were normal.

As the patient was clinically stable, relying on clinical finding, we started the conservative line of management with close monitoring in surgical ICU for the pancreatic injury. Nasogastric tube suction, antibiotic, IV alimentation, and H2-receptor antagonist were initiated with close observation of patient general condition and vital signs. The patient pain settled down and he made an uneventful recovery. Oral feeds were started after 1 week of admission first with liquids and then semisolid and

finally solid foods. The patient was discharged after 2 weeks but lost to follow-up.

A magnetic resonance cholangiopancreaticography (MRCP) (Fig. 3) was done to check for MPD status, which was suggestive of a linear low signal intensity area noted in between head and body of the pancreas passing from anterior margin of the pancreas to posterior margin measuring 1.7 cm in length, appearing hypointense on T1-weighted image (T1WI) and T2WI. This area is surrounded by an area of hyperintensity suggestive of perilesional edema. MPD could not be visualized in the above-mentioned area. MPD measures 0.25 cm in diameter in the head and 0.28 cm in diameter in rest of body and tail region. In consistence with the history of trauma, these MRCP imaging findings are suggestive of Grade 3 pancreatic injury.

Figure 1: Computed tomography scan image showing pancreatic laceration in arterial phase axial section

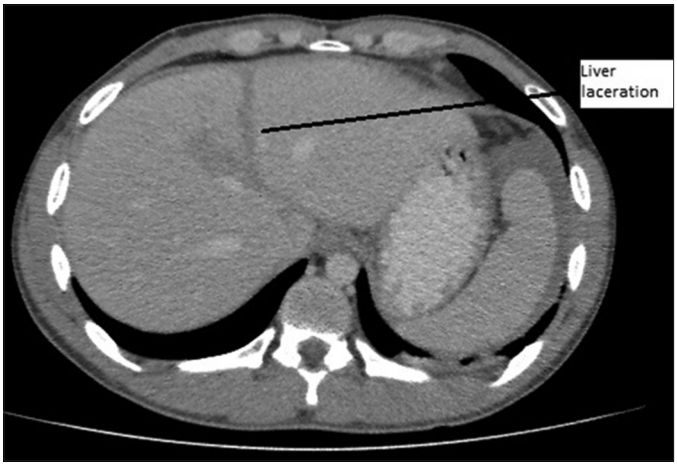

Figure 2: Computed tomography scan image showing liver laceration in portal phase axial section

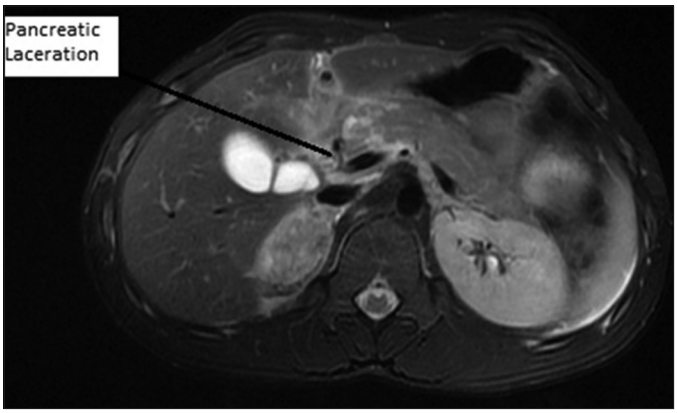

Figure 3: T2-weighted image axial section suggestive of pancreatic laceration on magnetic resonance cholangiopancreaticography

DISCUSSION

Pancreatic injury is a rare complication in patients with multiple injuries, usually associated with blunt or penetrating abdominal trauma [4]. Although the deep, central, and retroperitoneal location of the pancreas usually protects it from injury, this anatomic location is responsible for the diagnostic challenge. In a patient with trauma from an anterior-posterior force vector with deceleration and an anterior truncal seat belt mark, the pancreatic injury should also be considered in addition to aortic and small bowel injuries [5]. Pancreatic injury can range from minor contusions and hematoma to major lacerations or fractures with associated pancreatic duct injury according to the severity of injury [6].

In patients with blunt injury to the pancreas, ultrasound very easily detects the fluid collections/pseudocysts associated with pancreatic injury, but the CT scan provides the simplest and the least invasive diagnostic modality in the detection of a blunt abdominal injury [7].

Initial serum amylase levels carry a low sensitivity for the prediction of pancreatic injury. However, persistently elevated or rising serum amylase levels are more reliable indicators of recent pancreatic injury [6]. Definite identification of pancreatic duct injury needs endoscopic retrograde cholangiopancreaticography or MRCP in hemodynamically stable cases [3,8,9]. Accurate recognition of major pancreatic injury is essential because a delay in diagnosis and associated vascular injuries are largely responsible for the high morbidity and mortality [10,11]. Usually, CT is not suitable for those patients who are hemodynamically unstable or have a penetrating trauma [11].

CONCLUSION

Blunt injuries to the pancreas may be managed conservatively, in the absence of associated injuries and in hemodynamically stable patients. Our patient was managed conservatively with close monitoring of his general condition and vital signs. However, a patient who continues to have pain or who develops symptoms of pancreatic injury should be thoroughly reassessed for pancreatic injury and operative intervention is needed. Minor or isolated pancreatic injury recovers well and severe injuries may have a poor prognosis due to frequent association with other injuries.

REFERENCES

1. Craig MH, Talton DS, Hauser CJ, Poole GV. Pancreatic injuries from blunt trauma. Am Surg 1995;61:125-8.
2. Yeo CJ, Cameron JI. Exocrine pancreas. In: Townsend CM, editor. Sebastian Textbook of Surgery. 16th ed. WB Saunders: Harcourt Asia Ltd and Co; 2001. p. 457-72.
3. Khanna V, Gualti YS, Sreeram MN, Sharama R. A rare case of pancreatic

injury: Case report with an imaging perspective. Asian Oceanian J Radiol 2004;9:64-7.
4. Wright MJ, Stanski C. Blunt pancreatic trauma: A difficult injury. South Med J 2000;93:383-5.
5. Kennan JB. Blunt pancreatic trauma. South Med J 2000;43:383-5.
6. Hoyt DB, Coimbra R, Winchell RJ. Sebastian Textbook of Surgery. 16th ed. WB Saunders: Harcourt Asia Ltd and Co; 2001. p. 334-5.
7. Cirillo RL Jr., Koniaris LG. Detecting blunt pancreatic injuries. J Gastrointest Surg 2002;6:587-98.
8. Lane MJ, Mindelzun RE, Sandhu JS, McCormick VD, Jeffrey RB. CT diagnosis of blunt pancreatic trauma: Importance of detecting fluid between the pancreas and the splenic vein. AJR Am J Roentgenol 1994;163:833-5.
9. Lin BC, Chen RJ, Fang JF, Hsu YP, Kao YC, Kao JL, *et al.* Management of blunt major pancreatic injury. J Trauma 2004;56:774-8.
10. Deirdre MO, Colette S, Helen MF, Gerry P. Traumatic transection of the pancreas. Am J Surg 2002;183:191.
11. Dubois J, Porcheron J, Lacroix M, Menaoui N. Isolated pancreatic neck rupture. Ann Chir 2001;126:863-8.

Funding: None; Conflict of Interest: None Stated.

How to cite this article: Ghuge A, Sonarkar R, Gedam BS, Gajendra G. A rare case of pancreatic injury with transection of main pancreatic duct managed conservatively. Indian J Case Reports. 2018;4(4):286-288.

Doi: 10.32677/IJCR.2018.v04.i04.011